

WHAT IS CLAIMED IS:

1. An anode comprising:
 - (a) a niobium metal core,
 - (b) a conducting niobium suboxide layer, and
 - (c) a dielectric barrier layer comprising niobium pentoxide.
- 5 2. The anode according to Claim 1, wherein the anode has a tantalum content in the dielectric barrier layer ranging from about 1500 to about 12,000 ppm, relative to the anode.
- 10 3. The anode according to Claim 1, wherein the suboxide layer has a thickness that is at least about 50 nm.
- 15 4. A process for producing an anode for a capacitor comprising sintering niobium metal powders and electrolytically producing a dielectric barrier layer on a surface of a sintered body,
wherein the barrier layer is produced with an electrolyte that contains an aqueous solution of an organic acid containing an anion.
5. The process according to Claim 4, wherein the electrolyte comprises a tantalum oxalate solution.
- 20 6. The process according to Claim 4, wherein the electrolyte has a conductivity ranging from about 0.15 to about 25 mS/cm.
7. The process according to Claim 6, wherein the conductivity of the electrolyte is at least about 5 mS/cm.
- 25 8. A capacitor comprising an anode comprising (a) a niobium metal core, (b) a conducting niobium suboxide layer and (c) a dielectric barrier layer of niobium pentoxide.